WHAT IS CLAIMED IS:

1. A caliper (1) for a disc-brake comprising two side walls (2) at a distance from each other which delimit a space (3) suitable to accommodate a portion of a brake disc, in which one of said side walls (2) comprises means (4) for attaching the caliper (1) to a vehicle so that it is integral in rotation and in translation and the side walls (2) are connected to each other by means of a connecting structure (5) which straddles the disc space (3), in which each of said side walls (2) delimits at least one seating (6) capable of accommodating at least one pad (7) and in which the caliper (1) comprises thrust means (8) capable of forcing the pads (7) against the brake disc to clamp it, said thrust means (8) being secured to said side walls (2) in such a way that the latter absorb the entire clamping force and said seatings (6) being capable of securing the pads (7) in such a way that the side walls (2) also absorb the entire braking force applicable by the pads (7) to the brake disc by friction, in which said connecting structure (5) comprises one or more shells (10, 11), arc-shaped or arranged along an arc, connected so as to be integral with both side walls (2) along outer circumferential edges (12) thereof, in which the slenderness of said one or more shells (10, 11)

expressed as the ratio of thickness to circumferential extension relative to an axis of rotation of the brake disc is less than 17/100.

2. A caliper (1) according to claim 1, in which said one or more shells (10, 11) delimit one or more through openings (13, 14), in which the total area of opening of said through openings (13, 14) is less than 40% of the total area of the one or more shells (10, 11) including that of said through openings (13, 14).

3. A caliper (1) according to claim 2, in which said total area of opening of the through openings (13, 14) is between 10% and 30%, preferably from 15% to 25% of the total area of the one or more shells (10, 11) including that of the through openings (13, 14).

4. A caliper (1) according to claim 2, in which the slenderness of the entire connecting structure (5) formed by said one or more shells (10, 11), including the through openings (13, 14), expressed as the ratio of thickness to circumferential extension relative to the axis of rotation of the brake disc is between 2/100 and 4/100, preferably approximately 3/105.

5. A caliper (1) according to claim 4, in which the slenderness of each of said one or more shells (10, 11), expressed as the ratio of thickness to extension of the shell between said through openings (13, 14) in a

circumferential direction relative to the axis of rotation of the brake disc is between 5/100 and 17/100, preferably approximately 10/100.

6. A caliper (1) for a disc-brake comprising two side walls (2) at a distance from each other which delimit a space (3) suitable to accommodate a portion of a brake disc, in which one of said side walls (2) comprises means (4) for attaching the caliper (1) to a vehicle so that it is integral in rotation and in translation and the side walls (2) are connected to each other by means of a connecting structure (5) which straddles the disc space (3), in which each of said side walls (2) delimits at least one seating (6) capable of accommodating at least one pad (7) and in which the caliper (1) comprises thrust means (8) capable of forcing the pads (7) against the brake disc to clamp it, said thrust means (8) being secured to said side walls (2) in such a way that the latter absorb the entire clamping force and said seatings (6) being capable of securing the pads (7) in such a way that the side walls (2) also absorb the entire braking force applicable by the pads (7) to the brake disc by friction, in which said connecting structure (5) comprises one or more shells (10, 11), arc-shaped or arranged along an arc, connected so as to be integral with both side walls (2) along outer

circumferential edges (12) thereof, in which the slenderness of said one or more shells (10, 11) expressed as the ratio of thickness to circumferential extension relative to an axis of rotation of the brake disc is less than 17/100,

wherein said shell-type connecting structure (5) extends substantially along an arc of circle having a radius of 180 mm to 220 mm, preferably from 190 mm to 210 mm, in which the average thickness of the shell (10, 11) is less than 20 mm.

7. A caliper (1) according to claim 6, in which the average thickness of the shell (10, 11) is between 5 mm and 15 mm, preferably 12 mm.

8. A caliper (1) according to claim 7, in which the circumferential extension of the shell-type connecting structure (5) corresponds to an angle of aperture of a sector of circle of between 90° and 180°, preferably between 100° and 130°, still more preferably of approximately 125°.

9. A caliper (1) according to claim 6, in which the slenderness of the one or more shells (11) in the area of the seatings (6) for the pads (7), expressed as the ratio of thickness to axial extension relative to the axis of rotation of the brake disc is between 3/35 and 10/35, preferably between 5/35 and 7/35.

10. A caliper (1) according to claim 6, in which the slenderness of the one or more shells (10) in the areas of the walls (2) outside the seatings (6) for the pads (7), expressed as the ratio of thickness to axial extension relative to the axis of rotation of the brake disc is between 2/7 and 5/7, preferably 3/7.

11. A caliper (1) according to claim 6, in which the thickness of the shell/shells (10, 11) is substantially constant along the entire circumferential extension of the connecting structure (5).

12. A caliper (1) according to claim 6, in which the thickness of the shell/shells (10, 11) is substantially constant along the entire axial extension of the connecting structure (5).

13. A caliper (1) according to claim 6, in which said shell/shells (10, 11) are made in one piece with said side walls (2).

14. A caliper (1) according to claim 6, in which said connecting structure (5) comprises a single shell (10) which delimits at least one substantially circular through opening (14).

15. A caliper (1) according to claim 14, in which said single shell (10) delimits three openings (13, 14), substantially circular and equidistant from each other in a circumferential direction relative to the axis of

rotation of the disc, and also arranged halfway between the two side walls (2).

16. A caliper (1) according to claim 15, in which said three openings (13, 14) are arranged substantially in the area of the caliper (1) in which the seatings (6) for the pads (7) are located.

17. A caliper (1) according to claim 6, in which said connecting structure (5) comprises:

- two outer shells (10) arranged at two opposite ends (15, 15') of the caliper (1), viewed in a circumferential direction of the brake disc, which connect respective ends of the side walls (2);

- a central shell (11) arranged approximately halfway between said outer shells (10) which connects the side walls (2) in the area of the seatings (6) for the pads (7),

in which the connecting structure (5) delimits between said central shell (11) and each of said outer shells (10) a through opening (13) having a circumferential extension less than the circumferential extension of the adjacent shells (10, 11).

18. A caliper (1) according to claim 17, in which the circumferential extension of each of said through openings (13) is less than or equal to half the circumferential extension of each of the adjacent shells

(10, 11).

19. A caliper (1) according to claim 17, in which said through openings (13) are substantially rectangular.

20. A caliper (1) according to claim 19, in which the central shell (11) delimits a further through opening (14) arranged approximately at the centre of the central shell (11), said further through opening (14) having a circumferential extension less than that of each of the portions of the central shell (11) adjacent to it.

21. A caliper (1) for a disc-brake comprising two side walls (2) at a distance from each other which delimit a space (3) suitable to accommodate a portion of a brake disc, in which one of said side walls (2) comprises means (4) for attaching the caliper (1) to a vehicle so that it is integral in rotation and in translation and the side walls (2) are connected to each other by means of a connecting structure (5) which straddles the disc space (3), in which each of said side walls (2) delimits at least one seating (6) capable of accommodating at least one pad (7) and in which the caliper (1) comprises thrust means (8) capable of forcing the pads (7) against the brake disc to clamp it, said thrust means (8) being secured to said side walls (2) in such a way that the latter absorb the entire clamping force and said seatings (6) being capable of securing the pads (7) in

such a way that the side walls (2) also absorb the entire braking force applicable by the pads (7) to the brake disc by friction, in which said connecting structure (5) comprises one or more shells (10, 11), arc-shaped or arranged along an arc, connected so as to be integral with both side walls (2) along outer circumferential edges (12) thereof, in which the slenderness of said one or more shells (10, 11) expressed as the ratio of thickness to circumferential extension relative to an axis of rotation of the brake disc is less than 17/100,

wherein the circumferential extension of at least one of said shells (10, 11) is at least double its axial extension relative to the axis of rotation of the disc.

22. A caliper (1) according to claim 21, in which said one or more shells (10, 11) have a double curvature, concave viewed from the disc space (3), forming a first arc which extends transversely to the plane of the brake disc and a second arc which lies in said plane of the brake disc.

23. A caliper (1) according to claim 21, in which on the radially outer side of at least one of said shells (10, 11) a groove (16) is made, capable of accommodating a pipe for fluid to pass between hydraulic cylinders arranged in the two side walls (2) and embodying said

thrust means (8).

24. A caliper (1) according to claim 21, in which each of the two side walls (2) delimits three seatings (9) for hydraulic cylinder/piston units which embody said thrust means (8), said three seatings (9) being arranged on different circumferences relative to the axis of rotation of the brake disc.

25. A caliper (1) according to claim 24, in which said three seatings (9) are arranged on circumferences with a radius decreasing in the direction of movement (F) of the brake disc corresponding to forward travel of the vehicle.

26. A disc-brake having a caliper (1) comprising two side walls (2) at a distance from each other which delimit a space (3) suitable to accommodate a portion of a brake disc, in which one of said side walls (2) comprises means (4) for attaching the caliper (1) to a vehicle so that it is integral in rotation and in translation and the side walls (2) are connected to each other by means of a connecting structure (5) which straddles the disc space (3), in which each of said side walls (2) delimits at least one seating (6) capable of accommodating at least one pad (7) and in which the caliper (1) comprises thrust means (8) capable of forcing the pads (7) against the brake disc to clamp it,

said thrust means (8) being secured to said side walls (2) in such a way that the latter absorb the entire clamping force and said seatings (6) being capable of securing the pads (7) in such a way that the side walls (2) also absorb the entire braking force applicable by the pads (7) to the brake disc by friction, in which said connecting structure (5) comprises one or more shells (10, 11), arc-shaped or arranged along an arc, connected so as to be integral with both side walls (2) along outer circumferential edges (12) thereof, in which the slenderness of said one or more shells (10, 11) expressed as the ratio of thickness to circumferential extension relative to an axis of rotation of the brake disc is less than 17/100.